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# Parenting Profiles: Using a Person-Centered Approach to Examine Patterns of Parenting in Early Head Start Parents

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PARENTING PROFILES: USING A PERSON-CENTERED APPROACH TO  
EXAMINE PATTERNS OF PARENTING IN EARLY HEAD START PARENTS

by

Jan M. Esteraich

A THESIS

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PARENTING PROFILES: USING A PERSON-CENTERED APPROACH TO  
EXAMINE PATTERNS OF PARENTING IN EARLY HEAD START PARENTS

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The current study examined grouping patterns of parenting indicators in a low income-sample, using a person-oriented approach. Data were utilized from the Early Head Start Research and Evaluation Project (EHSREP; 1996-2010). A subset of the data that included parent interviews and video-taped parent-child observations when child was 36 months old, was examined (n=2,121). Four parent behavior indicators and two context indicators were selected to define the profile groupings: parent supportiveness, frequency of shared bookreading, parent-child activities; type of discipline; parent distress and family conflict. These six indicators were examined using latent profile analysis. Four distinct parenting profiles emerged: supportive, engaged but punitive, disengaged and punitive, and disengaged. Two profiles were more supportive of children's early development (76% of the sample) and two profiles were less supportive (24% of the sample). The profiles are described and analyzed. The results of these analyses show that within what otherwise may be considered a homogeneous population, subgroups of parents with similar parenting patterns, but different from the other subgroups, exists. These distinct parenting profiles found in the Early Head Start program may help similar programs identify families who share these profile characteristics and tailor their services to better match the needs of these families.

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## **CHAPTER 1**

### **INTRODUCTION**

#### **Parenting Is Central to a Child's Development**

Young children experience their world as an environment of relationships, with the most fundamental relationship with his/her parents. The nature and context of the interactions between the parent and child during the early years has important implications for the child's future development. Persistent parenting behaviors, such as sensitive and responsive caregiving (Bradley, Caldwell and Rock, 1988; Bradley, Corwyn, Burchinal, McAdoo, & Coll, 2001; Eiden, Edwards, & Leonard, 2007; Stams, Juffer, & Van IJzendoorn, 2002; Tamis-LeMonda, Bornstein, & Baumwell, 2001) and types of discipline strategies used (Berlin et al., 2009; Lee, Altschul, & Gershoff, 2013; Maguire-Jack, Gromoske, & Berger, 2012), are among the most consistent key factors in the prediction of later child competences. Parent-child relationships and interactions occur within environmental contexts. Contexts, such as parental distress, have been directly associated with negative child outcomes (Anthony et al., 2005; Bagner et al., 2009) as well indirectly associated, mediated through parenting behaviors (Ayoub, Valloton, & Mastergeorge, 2011).

#### **Parenting programs**

Given the critical contributions of parenting behaviors and contexts to children's development, many organizations offer parenting programs to support families in need. Program services may include building parent-child relationships, improving parenting behaviors, and addressing contextual difficulties. Parenting programs have empirically shown an increase in positive outcomes for parents and children, as well as improvements

in parenting behaviors associated with children's development (Administration for Children and Families 2002b; Beauchaine, Webster-Stratton, & Reid, 2005; Love, Tarullo, Raikes, & Chazan-Cohen, 2006; Raikes & Emde, 2006; Sanders, Baker, & Turner, 2012; Velderman, Bakermans-Kranenburg, Juffer, & van IJzendoorn, 2006).

### **Matching program services to needs**

Although every parenting program strives to support each and every parent, a program may work better for some parents than others. Part of this unevenness of match of services to needs may be due to the tremendous variability in parenting practices, and for any service addressing variability is difficult. Differences in how parents convey support to their child, spend time with their child in cognitive activities, talk with their child, and discipline their child are prevalent in what otherwise would be considered a homogeneous population (Hart & Risley, 1995; Rodriguez & Tamis-LeMonda, 2011). An integrated program, when delivered, may have gaps where the services do not fully address the parents' needs or overlaps where the services are not needed.

### **Identifying sub-groups by shared patterns.**

Programs strive to promote "what works best for whom" (Advisory Committee on Head Start Research and Evaluation, 1999) by offering diversified services to meet varied needs. However, tailoring a service on a case-by-case basis typically has limitations. A step in the direction of addressing client-specific diversification, however, is by identifying a small number of sub-groups within the client base. Each sub-group would be comprised of individuals who practice similar parenting behaviors and have similar contextual experiences, who share similar strengths and needs, enabling the program to



tailor its core service to the specific dimensions of these subgroups, providing a better ‘fit’ for the individuals receiving the services.

The present study intended to identify variation among the parenting behaviors and contexts of parents, to see if individuals had similar variation patterns, and to examine pattern differences between the identified subgroups of individuals who shared similar patterns. The purpose of this study was three-fold: 1) utilize a person-centered theory and appropriate person-centered statistical method to identify profiles of parenting across an ethnically diverse group of low-income parents, 2) examine differences in the identified profiles and 3) determine if profile analysis is applicable in the design and implementation of parenting intervention programs.

### **Theoretical Framework**

This study’s conceptual underpinnings are derived from Bronfenbrenner’s bioecological model of human development. This model articulates that human development is shaped by multiple, repeated interactions reciprocated between the person and his/her environment. These complex, bidirectional interactions function to promote or hinder development, depending on their quality (Bronfenbrenner & Morris, 2006). Direct, proximal interactions are the most influential to the child’s development, but other contexts in which the parent and child live also indirectly affect the child.

This study’s theoretical framework also includes the core principles of the person-centered theory of human developmental which emphasize the importance of individual adaptation from a holistic-interactionistic perspective. This perspective contends an individual’s previous experiences, genetic makeup, and current, contextual experiences operate as an indivisible whole (Magnusson, 1985; Sameroff, 1982). The six core

principles of the person-centered theory of development are (Bergman & Magnusson, 1997): (1) Individual specificity; “functioning, process, and development of behavior are, at least in part, specific and unique to the individual,” (2) Complex interactions; “the process is complex and is conceptualized as involving many factors that interact at various levels which may be mutually related in a complicated manner,” (3) “interindividual differences in intraindividual change; there is lawfulness and structure to intraindividual constancy and change and interindividual differences in constancy and change,” (4) Pattern summary; “processes develop in a lawful way that can be described as patterns of the involved factors,” (5) Holism; “the meaning of the involved factors is determined by the interactions among these factors,” and (6) Pattern parsimony; although there is, theoretically, an infinite variety of differences with regard to process characteristics and observed states at a detailed level, at a more global level there will often be a small number of more frequently observed patterns.”

For the first several years of a child’s life, the primary caregivers (typically the parents) interact with the child on a regular, consistent basis. According to the bioecological model, the quality of the parent-child interactions in this microsystem shapes the child’s experience and directly influences the child’s trajectory of growth and development. Less directly, but perhaps just as important, are the interpersonal and intrapersonal contexts between the individuals in the child’s microsystem, which also contribute to the experiences of the child. These experiences and contexts, operating together, contribute to the functioning of the parents and family system, which in turn, influence the physical, emotional and cognitive development of the child. These

experiences and contexts are considered together, analyzed in terms of an overall dynamic experience of parenting.

### **Parenting Profile Indicators**

When designing and implementing the core services for parenting intervention programs, practitioners are faced with a bewildering choice of interventions addressing an array of parent behaviors, functioning and circumstances. Researchers vary in their views of what may be the most critical parenting practices during the early years of a child's life. Practitioners are also fitting program services to specific areas of parenting needs to be responsive to the program task of what works for whom.

Specific parenting practices that directly affect and predict child outcomes, such as parental responsiveness and use of discipline (Tamis-LeMonda et al., 2001; Berlin et al., 2009), have been widely studied and may be the most salient for programs that aim to enhance the parent-child relationship and child well-being. Nonetheless, research has also documented the indirect impact of contexts and conditions in which the parents live, through the parents' behavior, on child outcomes (Anthony et al., 2005; Ayoub et al., 2011).

Child outcomes occur as a function of a dynamic process of indirect and direct interactions (Bronfenbrenner & Morris, 2006). People and contexts are inseparable. Because of this, I included profile criteria that would capture both the parent-child interactions and the holistic transactional environment of the family system. Furthermore, the parenting behaviors and contextual factors I chose are among the most strongly and significantly associated with child outcomes, as well as predictive of those outcomes, and have been targeted for intervention by existing programs. Although it is probably

unrealistic to expect any intervention to provide services for all the ecological needs of parents, including the proximal and distal factors most significantly associated with child outcomes in a parenting profile will provide the care provider with more precise contextual information regarding the the parental needs.

The parenting and contextual dimensions I selected as criteria for our parenting profiles include:

- Parent supportiveness
- Frequency of parent-child shared bookreading
- Parent-child activities
- Types of discipline
- Parent distress
- Family conflict

#### **Parent supportiveness.**

One dimension of parenting especially influential in children's development is parent supportiveness, which in our study is the combined indicators representing parental sensitivity and responsiveness. Although defined slightly differently across studies, sensitive and responsive parenting reflects the caregiver's ability to display high levels of warmth and acceptance towards their child, as well as accurately interpret the child's cues while responding promptly, appropriately and meaningfully to these signals (Ainsworth, Blehar, Waters, & Wall, 1978; Bornstein & Tamis-LeMonda, 1989; Bornstein, Tamis-LeMonda, Hahn, & Haynes, 2008).

A plethora of research connects parent supportiveness to a broad array of positive child outcomes. Children experiencing higher parent supportiveness have higher attention control in toddlerhood (Rodriguez, Ayduk, Aber, Mischel, Sethi, & Shoda, 2005), as well cognitive and language development (Landry, Smith, Miller-Loncar, & Swank, 1997).

Preschool children with responsive mothers develop fewer behavior problems (Stein & Newcomb, 1994) and display greater self-regulation, empathy, early conscience development, and social competence (Kochanska, 2002; Parpal & Maccoby, 1985; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983; Zahn-Waxler & Radke-Yarrow, 1990; Zimmer-Gembeck & Thomas, 2010). Likewise, maternal supportiveness through the first few years of life is directly linked to children's social skills at 4.5 years, above and beyond concurrent and indirect effects (Steelman, Assel, Swank, Smith, & Landry, 2002).

Looking at specific child outcomes, the relationship between parent supportiveness and children's social-emotional development is well documented and appears to be far reaching, affecting the trajectory of their social-emotional development years later (Landry, Smith, Swank, Assel, & Vellet, 2001). Maternal responsiveness with children aged 12 months has been linked to later child social skills including compliance to mother's requests, eye contact, verbalizations, gestures, and positive affect at 54 months of age (Steelman, et al., 2002). Bradley, et al., (1988) found that a mother's responsiveness to her 6-month child predicted the child's social behaviors at age 10; this relation was significant even after controlling for the mother's later responsiveness.

Parent supportiveness also has been shown to contribute to the development of self-regulation in children, which is an important factor in a child's early behavioral and academic competence (Blair & Razza, 2007; Burchinal, Campbell, Bryant, Wasik, & Ramey, 1997; Tamis-LeMonda, et al., 2001; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Razza & Raymond (2013) studied the association between maternal sensitivity and children's delay of gratification on a subsample (N= 1,007) of the NICHD

Study of Early Child Care and Youth Development (cite). Maternal sensitivity across the first three years of the children's lives was a significant contributor to delay of gratification development, and predicted individual differences in children's delay of gratification at 54 months, which in turn was associated with behavioral and academic competence in kindergarten.

Maternal responsiveness and its supporting role in children's cognitive development, specifically language, is also well documented (Bornstein & Tamis-LeMonda, 1989; Bornstein, Tamis-LeMonda, & Haynes, 1999; Landry, et al., 1997). Mothers' responsiveness to children's vocalizations and play predicts the developmental timing of language milestones such as the achievement of 50 words in expressive language (Tamis-LeMonda, et al., 2001). Observed levels of high maternal responsive behavior predicted greater increases in cognitive–language skills as children aged from 6 to 40 months (Landry et al., 1997). Mother supportiveness at age 14-months predicted children's vocabulary and letter-word knowledge at age five (Chazen-Cohen et al., 2009). In addition, mothers who are sensitive and stimulating in their engagements by responding to their children's interests and abilities are more likely to facilitate their child's language and cognitive development (Leseman & de Long, 2001; Tamis-LeMonda et al., 2001) and tend to have children with more advanced receptive language (Hann, Osofsky, & Culp, 1996) and productive language (Beals & DeTemple, 1993; Hart & Risley, 1995).

Furthermore, fewer externalized behavior problems were observed in children whose parents exhibited higher maternal acceptance (Rothbaum, Rosen, Pott, & Beatty,

1995) and higher levels of maternal sensitivity and responsiveness (Deater-Deckard, 2002; Kerr, Lopez, Olsen, & Sameroff, 2004; Stams, Juffer, & Van IJzendoorn, 2002).

### **Frequency of shared bookreading.**

Frequent shared bookreading is one of the most predominant of specific behaviors that seems to be positively associated with children's cognitive and language developmental outcomes. Raikes et al. (2006) found relations between book reading frequency and language outcomes to be strong and direct during the first 2 years of life, specifically for child vocabulary production and comprehension at 14 months and for vocabulary production at 24 months, even after controlling for a range of parent and child factors. In this study, path analyses also revealed the possibility of a 'snowball effect' where early exposure to reading at 14 and 24 months supports early vocabulary growth that, in turn, appears to lead to more reading and vocabulary growth at 36 months, through a transactional interaction between parent and child.

A meta-analysis by Bus, van Ijzendoorn, and Pelligrini (1995) showed that shared book reading in preschool is a strong predictor of later reading achievement, and the amount of time parents spent reading to their children was reliably linked to the children's language competency, emergent literacy and school readiness, accounting for about 8% of the variance in children's language outcomes, with consistency across social classes. Also, a national study of preschool children participating in Head Start (Administration for Children and Families, 2003a) showed that children who more frequently shared in book reading with their parents in the fall had higher scores on literacy measures and larger gains during the year, even after controlling for parental

literacy level, parental educational level, and books in the home. (Rodriguez, Tamis-LeMonda, & Spellman, 2009).

Research also shows that shared reading with young children improves their oral language skills (Whitehurst, Falco, Lonigan, Fischel, DeBaryshe, & Valdez-Menchaca, 1988; National Early Literacy Panel, 2008) phonemic skills, print concept knowledge, and positive attitudes toward literacy (DeBaryshe, 1993; Dickinson & Tabors, 1991; Lyytinen, Laakso, & Poikkeus, 1998; Wagner, Torgenson & Rashotte, 1994) and predicts vocabulary acquisition (Senechal, LeFerve, Hudson, & Lawson, 1996), which, in turn, facilitates later reading comprehension (e.g., Roth, Speece, & Cooper, 2002; Sénéchal & LeFevre, 2002).

#### **Frequency of parent and child activities.**

The amount and quality of time a parent and child spend together in positive, cooperative activities is emerging as an important contributor to children's development in the early years. Joint activities, sometimes referred to as joint play or joint engagement, are occasions when the parent and child engage in friendly play or work together (Gardner, Ward, Burton, & Wilson, 2003). Activities can range from singing, puzzles, drawing, games inside or outside, shopping and other outings, or special trips to museums or zoos. In these interactions, parents and children relate more harmoniously, and this is a time when parents are emotionally available to children (Galboda-Liyanage, Prince, & Scott, 2003a).

Children who spend more time in joint activities with their mothers have fewer emotional and behavioral problems (Gardner, 1987; Gardner et al., 2003; Pettit & Bates, 1989). Parenting behaviors exhibited during joint activities are fundamentally different



from other behaviors selected to define the parent profiles in this study. In these activities, parents have the opportunity to model, scaffold, and reinforce various desired social and emotion behaviors. Raver (1996) found that joint engagement during free-play significantly related to children's improved self-regulation strategies. For instance, in an exciting game of "Simon Says", provides a natural opportunity for the mother to model appropriate emotion regulation, help her child modulate excitement or distress, control impulses, negotiate conflict and respond to the rules of joint-play. Parent behaviors such as scaffolding (Mulvaney, McCartney, Bub, & Marshall, 2006), as well as positive reinforcement and proactive parenting (Lunkenheimer et al., 2008) during joint activities have been shown to predict higher levels of behavioral adjustment and self-regulation in early childhood.

The amount of time in joint activities, the frequency, and who initiates the activities are all associated to children's social development. Gardner, et al. (2003), found the amount of time spent in joint activities at age 3 predicted behavioral scores at age 4, while controlling for age 3 behavior ratings. In the same study, the frequency of joint activities predicted individual change in conduct scores over time, independent of maternal depression and negative parent-child interaction. Equally important, the study also found that higher amounts of time a child spent unoccupied (aimless, wandering, not engaged in play) also predicted lower individual conduct scores over time. These results support previous research on frequency and time spent in joint activities (Chandani, 2000; Gardner, 1987; Russell & Russell, 1996). Also, mothers' initiation of joint activities were associated with fewer behavioral problems (Lunkenheimer, Kemp, & Albrecht, 2013; Pettit & Bates, 1989).

In delineating a parenting indicator that contributes uniquely to the profile (or to child outcomes), it is important to consider possible collinearities between indicators. In this case, unless a unique contribution can be shown, it could be plausible that time spent in positive, joint activities is simply a marker for the absence of harsh discipline, or a proxy for supportive parenting. However, Gardner et al. (2003) showed that time spent in joint activities at the age of 3 did make an independent contribution to the development of fewer conduct problems during the preschool years, over and above the influence of parent supportiveness and discipline. Likewise, in the 2012 study from Alegre, the time mother and children played together correlated with the child's emotion regulation, even after controlling for supportive parenting.

### **Types of discipline.**

Managing a child's behavior is a key responsibility for a parent, and every parent frequently faces discipline decisions. Discipline has been defined as the strategies and methods parents use to discourage a child's inappropriate behaviors and to increase desired behaviors (Howard, 1991, 1996). Parents utilize a variety of discipline strategies, and researchers have begun to view these strategies in terms of a continuum, with reasoning and explanation at one end, to corporal punishment (e.g. spanking, hitting, yelling) at the other. Monitoring, ignoring, distracting, time out and taking toys away are found in the middle of the spectrum (Larzelere, Sather, Schneider, Larson, & Pike, 1998; Socolar, Savage, & Evans, 2007). Importantly, what types of discipline strategies a parent consistently chooses in response to situations has been associated to later child outcomes.

Starting in the second year of life a children's need for independence grows, and it naturally follows that disciplinary and parental control strategies are used with

increasing frequency (Hoffman, 1983; Laible & Thompson, 2002). Research has mainly focused on the strategy of corporal punishment, such as spanking; however, researchers are now exploring other discipline practices and their influence during the first five years of life. In the 2000 National Survey of Early Childhood Health (NSECH, N=2,068), parents of 3-year-olds reported “often” or “sometimes” using the strategies of explaining (90%), time out (70%), toy removal (65%), yelling (67%) and spanking (26%). Analysis of the data showed that child development risk is associated with increased reports of harsh discipline such as yelling. Spanking at age 3 was associated with a higher level of externalizing and internalizing behavior at age 5 (Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004). Multiple studies have shown that high levels of harsh and inconsistent discipline are associated with early disruptive behavior problems such as excessive defiance and aggression (Sheehan & Watson, 2008), depression (McLeod, Weisz, & Wood, 2007) and social withdrawal in children (Booth-LaForce & Oxford, 2008; Sturge-Apple, Davies, Cicchetti, & Manning, 2012).

Whether spanking is an appropriate discipline strategy or is harmful to children is still being debated. However, a preponderance of evidence suggests it is an ineffective strategy and correlated to poor developmental outcomes for children (Maguire-Jack, et al., 2012; Berlin, et. al., 2009). Approximately 65% of 3-year-old children have been spanked at least once in the prior month (Taylor, Lee, Guterman, & Rice, 2010), and spanking typically occurs most frequently around the age of 3 (Straus & Steward, 1999).

Research has established that the more often a parent physically disciplines his/her child, the more likely that child will experience negative outcomes such as increased aggression and antisocial behavior (Gershoff, 2002, 2010), even after

controlling for reciprocal associations between parent physical punishment and child aggression in the first 5 years of life (Maguire-Jack, et al., 2012). Lee, et al. (2013) found that increases in maternal spanking between ages 1 and 3 predicted increases in child aggression between age 3 and 5, accounting for initial levels of child aggression at age 3 and the stability of child aggression between age 3 and 5, maternal warmth at age 3, as well as parenting stress and depression.

With the incidence of corporal punishment peaking at 2 to 4 years of age (Regalado et al., 2004) and the established negative predictive outcomes of harsh discipline, I regard this parental behavior as a critical dimension to the parent profile. Also, there is evidence that parent early intervention programs can decrease the use of harsh discipline (Benasich, Brook-Gunn, & Clewell, 1992; Smith & Brooks-Gunn, 1997).

### **Parent distress.**

Parent distress is defined, in its most elemental form, as the experience of distress or discomfort that results from demands associated with the role of parenting, and is separate from other types of stress parents might experience such as marital, financial, or general stress (Ayoub, et al., 2011; Deater-Deckard, 1998). Parent distress includes stress resulting from loss of time for self, self-perceived incompetence as a parent, changes in relationships since having a child, difficulties within the parent-child dyad, restrictions because of parenting demands and responsibilities, and loss of social support.

Converging links between parent distress and unfavorable child outcomes have been reasonably well established (Crnic & Low, 2002). Children whose parents are experiencing high levels of parental distress are at increased risk for negative behaviors, decreased social-emotional functioning, and decreased language development (Deater-

Deckard & Scarr, 1996; Crnic, Arbona, Baker, & Blacher, 2009; Ostberg & Hagekull, 2000; Patterson, Reid, & Dishion, 1992).

Children may be affected directly by the parents' distress, or indirectly through the parents' behaviors (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Ayoub et al., 2011; Crnic and Greenberg, 1987, 1990; Karras, Vandeventer, Braungart-Riker, 2003). Chazen-Cohen, et al. (2009) found that higher levels of parent distress when a child was 14-months predicted less emotion regulation and vocabulary when the child was 5, with the influences of parent distress being direct. The effects were not mediated through sensitive or cognitively stimulating parenting behaviors or the home environment. Ayoub, et al. (2011) found both indirect and direct influences of parent distress when they examined the relationship between parental distress, parent interaction and language development skills in children ages 14, 24, and 36 months. Using the Early Head Start Research and Program Evaluation data (same data set as used in this study), Ayoub, et al. (2011) found that parental distress was related to a decrease in the parents' ability to respond sensitivity to their children in both the control group and the intervention group. Also, in the control group, the impact of parental distress on children's language development was partially mediated by parent-child interaction qualities, particularly the ability to provide cognitive stimulation. However, in the EHS intervention group the impact of parent distress on language development was direct and not mediated by parent interaction.

Another study demonstrated only direct effects of distress on child outcomes, without parenting behaviors mediating the relation (Anthony, et al., 2005). Regression analyses on data collected from 229 preschoolers attending Head Start schools revealed

that parenting stress accounted for a significant amount of the variance in social competence and internalizing/externalizing behaviors of the children. Parenting behavior did not appear to mediate these associations.

In a study of 114 mother-child dyads from low-income households who reported at least one other high risk factor, parent distress was a more potent predictor of child social-emotional outcomes than was maternal depressive symptoms (Whittaker, Jones-Harden, See, Meisch, Westbrook, 2011; Rafferty & Griffin, 2010).

### **Family conflict.**

The family systems theory points to the influence of the family as a whole upon any individual in the family, thereby broadening the range of influence on a child from strictly the parent-child relationship to the dynamic of different family processes and functioning. Theory and research have identified family factors that play a formative role in a child's development, including family emotional climate and interparental and interfamily functioning (Morris, Silk, Steinberg, Myers, & Robinson, 2007; Thompson and Meyer, 2007).

The family emotional climate consists of the quality of the different relationships in the family as well as the frequency and intensity of positive and negative expressions between family members (Darling & Steinberg, 1993). Positive expression and acceptance of emotions by parents has been linked to children's social competence, prosocial behavior, effective emotional regulation, and positive emotionality (Cumberland-Li, Eisenberg, Champion, Gershoff, & Fabes, 2003; Eisenberg, Gershoff, Fabes, Shepard, Cumberland, & Lasoya, 2001; Eisenberg, Zhou, Spinrad, Valiente, Fabes, & Liew, 2005; Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002). However,

children exposed to chronic, conflictual, critical and hostile interactions between parents or other members (such as grandparents, relatives living with the family) tend to exhibit greater emotional distress, behavioral dysregulation, emotional reactivity and greater psychophysiological dysregulation (Davies & Cummings, 1998; Davies, Surge-Apple, Cicchetti, Manning, & Zale, 2009; Koss, George, Bergman, Cumming, Davies, & Cicchetti, 2011).

Marital relations are a primary stress factor supporting or undermining parent functioning (Belsky, 1984). Low marital satisfaction is associated with greater stress by both men and women (Webster-Stratton, 1990). Indirect effects of negative family emotional climate on interparental functioning are widely documented. Numerous studies show a sequence of effects from marital conflict to hostile or depressed parenting to negative child outcomes (see Erel and Burman for meta-analysis, 1995; Katz & Gottman, 1996). These studies support the ‘spillover’ theory, which suggests that highly conflicted marriages or relationships place emotional stress on the parents leading to deterioration in the parent-child interactions (Easterbrooks & Emde, 1988), which in turn can negatively affect their child’s development. Children who live in a high conflict household are at a greater risk for social, emotional, and behavioral problems (Cummings & Davies, 1999; Davies & Cummings, 1994; Downey & Coyne, 1990), in large part because parents with marital distress are more likely to either withdraw from their children or become hostile toward them (Dix, Gershoff, Meunier, & Miller, 2004; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Tronick & Weinberg, 1997).

Negative family emotional climate and inter-parental functioning have also been shown to impact child outcomes directly. Researchers found, in 308 families with

adopted children, that conflicts between parents concerning financial matters were directly associated with child aggression at 27 months, as well as indirectly, mediated through hostile parenting (Stover et al., 2012). The study also found a small direct negative effect between parents' child-related conflict and the child's cognitive ability at 24 months, after controlling for stability in cognitive ability over time. Pendry and Adam (2013) found similar findings; significant direct negative associations between child-related interparental conflict at 9 months and child cognitive ability at 24 months, controlling for prior cognition and parent and household characteristics. This direct effect also was not mediated by parent supportiveness or child attachment security. This suggests that interparental conflict may interact with certain aspects of parenting behavior or child coping and regulation strategies not considered in these studies, which then may associate with the child's developmental outcomes.

### **Person-centered Approach**

Parenting is a complex undertaking comprised of many specific behaviors and contexts that work individually and together to influence child outcomes. When analyzing human behavior, such as parenting and child development, researchers often sort the complexity by isolating and focusing on one variable of the process as the analytical unit. By studying isolated variables, researchers have uncovered invaluable evidence of relationships between variables that have been generalized to specific populations, offering valuable insights for prediction and analysis of behavior and development. The majority of parenting research studies to date has utilized this variable-centered approach to identify significant parenting behaviors and their predictive value on children's developmental outcomes (Zaslow et al., 2006).



Person-centered approaches, in contrast, address the person-centered theoretical and ecological notion that variables are dynamic collaborators in the overall functioning of the person, and therefore cannot be isolated for analysis (Magnusson, 1985). The interplay of behavioral and contextual variables creates patterns of experience for the individual, and individuals who share similar patterns of experience naturally crystallize into subgroups (Bergman & Magnusson, 1997). Subgroup membership is based on shared commonalities within the group, and the subgroups differ from each other. The individuals' holistic experience is the unit of analysis, with the researcher analyzing the composition of the variables within the subgroups, and the overall differences between the subgroups (von Eye & Bogat, 2006).

While the variable-centered approach strives to minimize variability to discover central tendencies and overall general principles in groups, person-centered approach embraces variability within groups, in hopes of uncovering order behind the variation. Even when a population has equivalency on typical markers of homogeneity, such as SES, there may be great variation in the processes and functioning of individuals within that group. For instance, parenting behaviors and child outcomes do vary substantially between individuals within a single economic strata (McLoyd, 1990).

Person-centered and variable-centered methods represent complementary rather than competing approaches to developmental research (Bergman & Trost, 2006; Magnusson & Bergman, 1988). Which methods to employ should be dictated by the study's research questions. In this study, I utilized both methods. I consulted the variable-centered research to determine which variables of parenting behaviors and contexts are generally the strongest predictors of child outcomes. Using a person-centered method, I

then examined how individuals with shared patterns of experiences (of these behaviors and contexts) divided into subgroups. I refer to the subgroups as profiles.

### **The Present Study**

The primary goal of this study was to examine how parents of 36-month-old children from low-income households group together based on qualities of parenting behaviors and contextual experiences they share, using a person-centered analytical approach, and to describe the parent profiles obtained for each group. A small, but growing, number of studies have employed a person-centered approach when examining parenting dimensions (Bornstein, Gini, Suwalsky, Putnick, & Haynes, 2006; Cook, Roggman, & D’Zatko, 2012; Hirsh-Pasek & Burchinal, 2006; Rhoades, Greenberg, Lanza, & Blair, 2011; Rodriguez & Tamis-LeMonda, 2011). Cook et al., (2012) employed a person-centered approach to analyze the same data set as this study, at three time points, emphasizing observable parent behavior as well as home environment factors. Iruka, Bingham, Green, Jones-Harden, & Esteraich (unpublished manuscript, 2014) examined how subgroups of parents formed when considering parental behaviors, beliefs, expectations for child, parental functioning, and socio-demographic factors in a national sample of parents whose children attend Educare. The current study also examines parenting patterns, but has selected four parenting behaviors and two contextual dimensions that are of fundamental, theoretical, and practical importance to children’s developmental outcomes, and are behaviors and contextual dimensions that have been, or could be, effectually targeted by parenting programs.

Although other studies have utilized the person-centered approach in analyzing parenting dimension, this study selected a small number of parenting indicators shown to

be very influential and predictive of child outcomes, are observable and measurable, and manifest in the child's proximal environment. Also, these specific indicators were chosen because research indicates they can be positively affected by intervention programs. Offering analysis such as this is also helpful to programs working with a client base with varying degrees of needs.

To summarize, this study draws upon a large group of low-income parents to examine patterns of parenting practices within the group, identifying subgroups of individuals who share similar parenting behaviors and contexts. The profile of these subgroups are then described and discussion follows about the benefits of identifying differing profiles within a seemingly homogeneous group in helping program directors better match services to client needs.

Specifically, I ask the following question:

**Research Question:** Are there subgroups of individuals who share similar patterns of variation across the six parent behaviors and parenting environmental contexts?

**Hypothesis:** The individuals in the overall sample will form subgroups, each defined by a similar pattern across the selected indicators.

## **CHAPTER 2**

### **METHODS**

#### **Overview**

The current study draws on data from 2,121 parents from the EHSRP dataset (N = 3,001). The subset of parents, comprised of control and program participants who completed the 36-month assessment, was analyzed using latent profile analysis to see if different parenting patterns emerged when parents sharing similar characteristics were grouped together. The variables used in the analysis include parent supportiveness, frequency of reading to the child, parent-child activities, parental distress, type of discipline, and family conflict.

#### **Early Head Start – Early Head Start Research and Evaluation Project**

In 1995 the Administration for Families and Children began a large-scale, ongoing research and evaluation of Early Head Start National Early Head Start Research and Evaluation Project (EHSREP). The secondary data used in this research come from the first phase of this study (1995-2003). Early Head Start (EHS) is a two-generation program designed to serve low-income parents and their children, specifically families who are expecting a child or have infants and toddlers up to age three. The program directly supports the development of young children as well as offers parenting education and family support services.

Seventeen Early Head Start programs from across the country (urban and rural settings) were purposely selected to participate in the rigorous, random assignment, quasi-experimental evaluation. The 17 programs were chosen because of their representation of EHS's diverse approaches to early education, which include programs

predominantly offering home visitation, programs predominantly offering center-based childcare, or programs that offer a mix of both. Following the EHS guidelines, the 17 sites recruited families whose income was at or below the federal poverty guideline, and was either expecting a child or had a child under the age of 3. In addition, to be in the research, the infant had to be younger than 12 months of age, and the family had had no more than 3 months of exposure to any similar early childhood intervention program, prior to enrollment. The resulting research sample reflected the EHS program approaches and the family demographic characteristics of families that are typically served by Early Head Start (ACYF, 2002).

Families meeting the inclusion criteria for the research project and willing to participate (N= 3001; ACF, 2002) were randomly assigned to the EHS program or the control group. The control group did not receive EHS services, but could participate in family care, support services, and childcare elsewhere. Data were collected at five points in time: when the focus child was 14, 24, 36 (Phase I), and 60 months of age (Phase II) as well as when children were 10 years of age (Phase III).

### **Participants**

The current study draws a subset from the EHSRP dataset (N = 3,001). This subset consists of 2,121 parents from the program and control groups, who completed the 36-month assessment measures. The key data sources used for the variables in this study include the 36-month parent interview and the 36-month video assessment. Of the entire data set (N = 3,001), 67.4% completed the 36-month parent interview and 52.7% completed the 36-month video assessment.

The parent who was assessed was defined as primary caregiver and in 99% of

cases was the mother. In our data subset, on average the mothers were 23 years old, the fathers were 26 years old. Slightly over half of all parents were high school graduates or GED recipients, with 22.4% obtaining some schooling after high school. Slightly under 75% of the families were one-parent households, typically with the mother as the head of the household. Approximately 34% of the families in the study were African American, 24% Hispanic, 37% European American, and 5% Asian, Pacific Islander, American Indian, Eskimo or Alut. See Table 1 for a further description of the baseline characteristics of the program and control groups. Significance tests of each characteristic comparing the program group and the control group found no significant difference on any characteristic between the two groups.

## **Procedures**

For data collection, the participants (the parent, typically the mother, and the focus child) were interviewed in their home for approximately 2 hours at each assessment time point. During this time trained assessment professionals interviewed the parent(s), video-recorded the mother and child interacting during semi-structured activities provided by the assessor, and assessed the child's various areas of development. The assessment professionals were required to demonstrate at least 85% consistency or reliability for administration of all the assessments prior to the visits, following a standard EHSREP protocol (Administration for Children and Families, 2002b). Mathematica Policy Research coordinated the data collection and certified data collectors. Only 36-month data were used in the current study.

## Measures

Multiple parenting measures were used to capture the parenting quality, behaviors, developmental support and parental psycho-social functioning within the parent-child environment.

### **Parenting profile indicators.**

#### ***Parent supportiveness.***

Parenting behaviors were observed from videotaped parent-child interactions in a semi-structured play task, called the Three Bag Assessment, adapted for the EHS research project from the Three Boxes Procedure coding scales used in the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care (NICHD Early Child Care Research Network, 1999; Owen, Norris, Houssan, Wetzel, Mason, & Ohba, 1993). This videotaped task is a 10-minute long session where the parent is presented with three cloth bags, numbered 1 – 3, each containing different toys a 3-year-old would find interesting (a book, toy set for symbolic play, another toy set). The assessor invites the parent to play with her child however she wishes, with one request that the bags be used in numerical order. The instructions are deliberately vague, to capture natural interaction between the parent and child. The observed parent behaviors included parent sensitivity, positive regard, stimulation of cognitive development, parental intrusiveness, negative regard, and parent detachment.

The videotaped observations were scored by a separate EHSREP research team, as noted, at Columbia University, who achieved reliability to a criterion of 85% (Administration for Children and Families, 2002b). Tapes were drawn randomly on a weekly basis and checked for inter-rater reliability, which averaged 94% for the 36-month wave, ranging from 86% to 100% (Brady-Smith, Fauth, & Brooks-Gunn, 2005).

For a trained and reliable coder, 15 – 18 minutes were needed to view the tape (one full viewing and rewinding if needed) and code the nine behavior rating scales. Each observed behaviors of the mother-child interaction were coded on a seven-point scale, 1 – 7, with seven indicating a high index of the behavior.

The indicator “parent supportiveness” was constructed for this study by computing the composite mean scores for the parental sensitivity and positive regard variables. The Three Bag Assessment protocol defines parent sensitivity as the degree to which the parent is “in tune” with the child, how accurately the parent perceives the child’s signals, and how quickly and appropriately the parent responds to these signals. A score of one is described in the protocol as “Very Low Sensitivity” (interactions are characteristically adult-centered and/or the parent is unavailable and non-responsive to the child’s signals, moods, interests and needs). A score of seven is described in the protocol as “Very High Sensitivity” (parent is very sensitive and responsive throughout the interaction. Interactions are child-centered. Parent praises the child). Positive regard is defined as parent’s expressions of love, respect, warmth and admiration for the child with appropriate matching tone. A score of one is described in the protocol as “Very Low Positive Regard” (parent displays no positive regard). A score of seven is described in the protocol as “Very High Positive Regard” (parent is very positive in expressiveness and behavior, affect is positive, and spontaneous, parent’s consistent expressions of positive regard are clearly enhancing the child’s self esteem). The mean score for the full data sample (N=3,001) for parent supportiveness was 4.00. The description for a score of four is “Moderate Sensitivity” (the frequency and quality of the parent’s sensitivity and insensitivity is about equal) and “Moderate Positive Regard” (some positive regard but



not predominant, positive expression are neither intense nor frequent). The composite score for parent supportiveness (including the cognitive stimulation variable) has a Cronbach's alpha of .82 - .83. The parent observational measure has been compared to widely-used assessments that tap similar parenting constructs (e. g. HOME) (Ipsa et al., 2004). Also, ongoing papers by the Early Head Start Consortium Parenting and Methods Workgroups explore the validity of this measure.

***Frequency of shared bookreading.***

Questions from the Infant-Toddler version of the Home Observation for the Measurement of the Environment (HOME; Caldwell & Bradley, 1984) were administered during the parent interview conducted in the parent's home. The HOME is a widely used measure, designed to assess aspects of stimulation and interaction in a child's home environment important to a child's optimal development. In the Early Head Start research, the frequency of shared book reading question was measured separately from other questions in the assessment because of its importance to a child's language and cognitive development (Raikes, et al., 2006). The parent was asked, "In the past month, how often did you read stories to your child?" The parent chose an answer which was reversed coded and scored as follows: (6) more than once a day; (5) about once a day; (4) a few times a week, (3) a few times a month, (2) rarely or (1) not at all. The scores of the scale ranged from 1 – 6, where higher scores indicated a higher frequency of shared bookreading. The mean score for the sample was 4.53.

HOME has been used extensively in research to reveal relationships between several aspects of the home environment and children's developmental outcomes. Several researchers have studied the psychometric properties of the IT HOME and it has been

concluded that inter-observer agreement has never fallen below .80 while the internal consistency of the total scores was found to be as high as .80 and internal consistency of the subscales ranged from .30 to .80 (Bradley, 1993). HOME has a substantial correlation with cognitive measures (Bradley et al., 1988) and can predict cognitive development (Molfese, DiLala, & Bunce, 1996).

***Frequency of parent-child activities.***

Questions from the parent-child activities subscale of the Infant-Toddler HOME (Caldwell & Bradley, 1984) were used to assess the frequency of parent engagement of the child in activities that stimulate cognitive and language development. Parents were asked to respond to an 11-item subscale and the scores were averaged to form a composite score for this variable. The scores ranged from 1 – 6, where higher scores indicated a higher frequency of that activity. Questions for this indicator included “In the past month, how often did you play outside in the yard, a park or a playground with your child?” “In the past month, how often did you take your child on an outing such as shopping, to the park, or a picnic?” and “In the past month, how often did you tell stories to your child?” The parent chose an answer which was reversed coded and scored as follows: (6) more than once a day; (5) about once a day; (4) a few times a week, (3) a few times a month, (2) rarely or (1) not at all. The average for the sample was 4.36. The internal consistency reliability for this subscale is .76 (EHSREP, 2004). See above for validity information about the HOME.

***Type of discipline.***

The discipline index from the Infant-Toddler version of the Home Observation for the Measurement of the Environment (HOME; Caldwell & Bradley, 1984) measures the

parent's degree of harshness of discipline strategies when in potential conflict situations with the child. During the parent home interview, the interviewer asked the parent how he/she would handle each of these four situations: 1) If your child keeps playing with breakable things, what do you do first? And then what? 2) If your child refuses to eat, what do you usually do? And then what? 3) If your child has a tantrum in a public place, such as a supermarket or bus stop, and words do not work, what do you do? 4) Most children get angry at their parents from time to time. If your child got so angry that he/she hit you, what would you do? And then what? Parents provided open-ended answers to each of the four scenarios, which were classified into 5 types of discipline: (5) use physical punishment, (4) shout at the child, (3) threaten the child with punishment, (2) warn or send child to his/her room, or to timeout (1) prevent/distract, talk, or remove toy. The index score was determined by the harshest strategy given as a response to the four questions. Thus, a parent who said she/he would use physical punishment, in any of the 4 scenarios, would receive a 5. A parent whose response in all of the scenarios was to distract or talk to his/her child would receive a 1.

This measure is not a continuous scale, but an ordinal scale based on the continuum of discipline strategies as outlined in the literature (Larzelere et al., 1998; Socolar et al., 2007). For this study, no predictions were being gleaned from the data, rather patterns of interaction with the other variable indicators were analyzed. While questions can be raised about using this ordinal scale as a continuous, there is precedent. The Early Head Start Research and Evaluation Project used this scale as a continuous variable in its impact analysis (ACF, 2002). An ordinal scale was appropriate for the data and statistical model used.

Although researchers and literature argues that parenting practices such as hitting, physically or verbally threatening, and scolding negatively affect children and youth (American Academy of Pediatrics, 1998), individual interpretations and experiences of harsh or punitive discipline may vary because of cultural and contextual factors (Gershoff, 2002). For instance, research has revealed that physical discipline is less strongly associated with adverse child outcomes in conditions of greater perceived cultural normativeness (Lansford et al., 2005). However, in studies exploring cultural and ethnic differences in discipline strategies and beliefs, the association of physical punishment to negative child outcomes may not be as strong, but inevitably higher use of physical discipline is associated with increased aggression and anxiety in children, regardless of the cultural and ethnic differences (Gershoff et al., 2010; Lansford et al., 2005). The average score for this sample is 4.4, with internal consistency reliability of .78. (EHSREP, 2004).

***Parent distress.***

Two subscales from The Parent Stress Index – Short Form (PSI-SF; Abidin, 1995) were given when children were 36 months. In this study I used only the Parental Distress subscale, which assesses the distress the parent is feeling in his/her role as a parent, parental perception of competence as a parent, and stresses due to restrictions in other life areas caused by the parenting role. Parents answered this 12-item subscale by choosing answer between (1) Strongly agree (2) Mildly agree (3) Not sure (4) Mildly disagree and (5) Strongly disagree to statements such as “You feel trapped by your responsibilities as a parent,” and “You feel alone and without friends.” And “You often have the feeling that you cannot handle things very well.” The scores for each question

are added together to create a total score, with a range from 12 – 60. Scores were recoded so higher scores indicate a higher level of parental distress. The average score for the sample was 25.19 with a range of 12 – 58. Previous data collection waves of the EHSREP (14 and 24 months) set a cutoff score of higher than 36 to indicate a code of “yes” to parent distress. The 36<sup>th</sup> month data collection wave did not have this cutoff. The PSI-SF has been found to have a test-retest reliability of .84 and a Cronbach’s alpha reliability of .91 (Abidin, 1990). The parental distress subscale was found to have high internal consistency and a strong concurrent and predictive validity across maternal and parenting constructs and has a Cronbach’s alpha reliability of .80 (Whiteside-Mansell, Ayoub, McKelvey, Faldowski, Hart & Shears, 2007).

***Family conflict.***

The Family Environment Scale (Moos & Moos, 1994) measures the social environments of families using ten key dimensions. The dimension measured in the EHS research project, and in this study, was the Family Conflict dimension. This 5-item subscale measures the extent to which anger and aggression is expressed in the family and if conflict is a recurring pattern in the family’s interactions. Using a 4-point scale, where (4) Strongly agree (3) Mildly agree (2) Mildly disagree and (1) Strongly disagree parents responded to statements such as “We fight a lot” and “We often criticize each other” and “Sometimes we get so angry we throw things”. The item scores were averaged and ranged from 1 – 4, with higher scores indicating higher frequency of family conflict. The mean score for the entire sample was 1.67 (SD = .53). The reported Cronbach alpha reliability for this subscale is .70. The conflict subscale is highly related to other widely used self-report assessments of similar constructs (Moos, 1990; Moos &

Moos, 1994) such as the Conflict Tactics Scale and the hostility subscale of the California Q-Sort.

### **Approach to Analysis**

The study's research hypothesis addresses the person-centered theoretical principles of complex interactions, holism and pattern parsimony. Various person-centered statistical methods such as classification (e.g., longitudinal cluster analysis, latent class, trait, and profile modeling) hybrid classification (e.g., latent growth mixture modeling) and single-subject methods (e.g., p-technique factor analysis, dynamic factor analysis) have been identified to empirically test one, some or all person-centered theoretical principles (Sterba & Bauer, 2010). For this study, the classification method of latent profile analysis (LPA) was selected to match the theoretical principles of the research question and data. LPA is a person-centered statistical method used for detecting qualitatively different subgroups of related cases from multivariate data. LPA is similar to cluster analysis, with important distinctions. LPA is modeled mathematically and can be empirically described, whereas clustering is not mathematically modeled and is descriptive in nature. The underlying construct in LPA is a categorical latent variable reflecting associations among a set of observed variables. To estimate latent models, any type of manifest variable can be used (called 'indicators' in latent variable analysis) be it categorical, binary, ordinal, or in the case of this study, continuous (Bartholomew & Knott, 1999). Full information maximum likelihood estimation was used, allowing for missing data on the parenting indicators. Maximum likelihood estimates were obtained using the expectation maximization (EM) algorithm. This model estimation elicits

maximum likelihood parameter estimates for incomplete data, but does not directly impute missing values.

The LPA models estimate two types of parameters: 1) condition response probability and 2) class membership probability. Condition response probability is the probability that any one individual of a class will respond to one indicator in a particular way for every combination of possible responses and latent class membership. Class membership probability identifies the relative frequency of class membership in the population.

Using Mplus<sup>®</sup> statistical software (Muthen & Muthen, 2010) model parameters were estimated freely, with an unconstrained model and no parameter restrictions. Maximum likelihood with robust standard error (MLR) estimation, based on the expectation maximization (EMA) algorithm, was used to estimate the model parameters. MLR estimates the model parameters for which the manifest data are most likely. The MLR parameters were then used to test whether a model with k or k-1 distinct subgroups is significantly more likely to produce the observed outcomes than a model with no distinct subgroups of parenting practices. The parenting data was standardized to help with model convergence. It was determined the 4-class solution was the best model fit for the data.

## CHAPTER 3

### RESULTS

This study examined the parenting patterns of 2,121 low-income parents of a 36-month-old child. Four parenting behaviors and two environmental parenting contexts, documented as influential to children's development, were used as indicators for a latent profile analysis.

**Research Question: Are there subgroups of individuals who share similar patterns of variation across the six parent behaviors and parenting environmental contexts?**

As hypothesized, parents were found to share similar patterns of the indicated behaviors and contexts, forming distinct subgroups (profiles) that were qualitatively and quantitatively different from each other. The profiles were labeled *supportive, engaged but punitive, disengaged and punitive, and disengaged*.

#### Data Analysis

The EHSREP data were analyzed using SPSS® v.21 and Mplus® v.7.2 software. Descriptive statistics for the parenting indicators were obtained for the sample, including minimum and maximum (raw) scores, mean scores, and standard deviations (see Table 2). The raw data were standardized because of scaling differences across the measured parenting indicators. The standard scores were used in the modeling sequence and for the interpretation of the profiles.

For the latent profile analysis, full information maximum likelihood (FIML) estimation was used to model parameter estimates, estimating for missing data via the expectation maximization (EM) algorithm without imputing missing values directly.



## Number of Parent Profiles

Goodness of fit information criterion and ratio tests were completed to determine the most parsimonious number of profiles (classes) for the best model fit. To identify the appropriate number of classes for the data, the fit of 3-, 4-, and 5-class models were examined using the Akaike's Information Criterion (AIC) (Akaike, 1987), the Adjusted Bayesian Information Criterion (BIC\*) (Schwartz, 1978), the The Lo-Mendel-Rubin likelihood ratio test (LMR, 2001), and the Bootstrap Likelihood Ratio Test (BLRT) (McLachlan & Peel, 2000). Multiple starting values for the estimated parameters were executed (McLachlan & Peel, 2000). There was differing information regarding the best model fit for the data, which is not unusual in determining model fit. Assumptions made in latent variable analysis can make the selection of the number of classes very subjective. Often theoretical or practical justifications, together with the statistical criteria, are used to determine the best model fit.

The AIC and BIC were used to compare the model fit for 3-, 4- and 5-classes, with the lowest criterion value being desirable. When comparing the 3- and 4-class models, the 4-class model produced the lowest AIC and BIC\* values. When comparing the 4- and 5-class models, the 5-class model was slightly lower. The LMR test was also used to evaluate the 3-, 4-, and 5-class model fit. A result of  $p < .05$  indicates the model with more classes fits significantly better. For the 3- and 4-class model the  $p$  value was .3495 indicating a 3-class fit is better. For the 4- and 5-class model,  $p = .9973$ , indicating the 4-class model provided the best fit. I then checked the LMR for 2- versus 3-class model and it was  $p = .000$ , indicating a 3-class model is a better fit.

Given that the AIC and BIC values indicated the 4-class model was a better fit, and the LMR indicated a better fit with the 3-class model, I turned to the Bootstrap Likelihood Ratio Test (BLRT) (McLachlan & Peel, 2000). Again, the BLRT uses the p value to determine best model fit, with  $p < .05$  indicating the model with  $k + 1$  classes fits better. The 3- and 4-class tests pointed to the 4-class model being the best fit. There was not a BSRT done for the 5-class solution. A table of the model comparisons test results are shown in Table 3. Judging from the results of the BLRT, the LMR, the AIC and BIC\* tests, a three class model is a better solution for obtaining a finer grain picture of needs of parents. Furthermore, adding a 5<sup>th</sup> class to the 4-class solution would not improve the fit significantly. Qualitative difference in the 4 and 5-profile models were not great enough to warrant special programming attention for a 5<sup>th</sup> class. Therefore, the four-class model was selected as the most efficient model for the EHS data, using the parenting and context indicators. The four profiles revealed different patterns in parenting quality and contexts. Standard mean scores for the indicators in each profile can be found in Table 4.

### **Description of Parent Profiles**

Each subgroup (profile) was examined in detail. A graph of the profiles is shown in Figure 1. The y axis shows the mean of the standard Z-scores for each indicator.

The first profile was comprised of 784 individuals, representing 37.4% of the sample. This profile was labeled “supportive” because of the high scores for behaviors that support positive child development according to child development literature. Warm, responsive and appropriate parental support, time spent together in activities and shared bookreading (.36, .4 and .49 standard deviations above the group mean, respectively), all

scored high. This subgroup also scored the lowest in the discipline indicator (1.02 SD below the mean) implying they tend to consistently use the least punitive discipline strategies such as reasoning and explaining. Parent distress and family conflict are also lower than average for this subgroup and the lowest for all the profiles (.21 and .18 below the standard deviation). This subgroup would be considered to have the most developmentally supportive profile of this sample group.

Profile 2, labeled “engaged but punitive”, contained 814 individuals, representing 38.4% of the sample. Unlike Profile 4, this subgroup of parents does spent time playing and reading with their child (.33 and .26 above the SD) and are slightly below the group mean for supportiveness. However, this subgroup also scored almost 1 standard deviation higher in discipline than the group mean. Parents in this profile do engage with their child in activities and supportiveness, but have a punitive discipline style. They are slightly above the norm for parent stress and family conflict (.04 for both), so contextual stress is lower for this subgroup compared to profile 1.

The third profile contained 228 individuals, representing 10.8% of the sample. This profile was labeled “disengaged” because of the low scores in intentional time spent with the child and lack of parental sensitivity and support. Time spent in parent-child activities was 1.1 standard deviations below the group mean, and parent supportiveness was .39 SD below the mean (the lowest score of the group). The parent distress score was the highest of the group (.35 SD above the group mean) and the family conflict score second highest (.19 SD above the mean). The “disengaged” profile was distinguished from the “disengaged and punitive” profile because of its very low discipline score (.92 SD below the mean). The scores on the indicators suggest the parents in this profile are

highly stressed and not engaged with their children, even in situations that may require a guidance or discipline response.

The fourth profile was labeled “disengaged and punitive”, was comprised of 285 individuals, representing 13.4% of the sample. This profile was distinct because of the very high mean score on the discipline indicator and the low scores on indicators that are considered to be supportive of children’s development. This subgroup was almost one standard deviation higher on the discipline indicator when compared to the group overall mean (+ .94). For this indicator, the higher the mean score reported, the harsher and more punitive the typical discipline strategy of the parent. Although it is difficult to determine from the standardized score exactly what type of discipline these parents typically choose, there is high likelihood it is in the harsh range (threatening, yelling, hitting). Also, the parenting behaviors that represent time spent with the child were 1.20 to 1.36 standard deviations below the group mean, and parent supportiveness was also below the mean, although only a third of a standard deviation. This profile indicates these parents do not spend much time with their child, and when time is spent with the child the interaction may be harsh. Looking at the contextual indicators, this subgroup is .20 to .26 standard deviations above average in parent distress and family conflict. This group scored the highest for family conflict.

When comparing the profiles to each other, the supportive profile (profile 1) was chosen as the comparison profile since it represented the profile that is most developmentally supportive of child outcomes. When the disengaged and punitive (profile 4) was compared to the supportive profile, considerable differences between the indicator scores were found. There was a 1.95 SD difference in the discipline indicator

scores, a 1.6 SD difference in the parent-child activities indicator, a .86 SD difference in shared bookreading, and a .68, .42. and .44 SD difference between parent supportiveness, parent distress and family conflict, respectively.

When comparing the disengaged profile (profile 3) to the supportive profile, again considerable differences in indicator scores were found, although not as extreme as profile 4. There was a 1.46 SD difference between the disengaged and supportive profiles for the parent-child activities indicator. A 1.41 SD difference was found for shared bookreading and a .75 SD difference for parent supportiveness. Type of discipline, parent distress and family conflict differences were .1, .57, and .37 of a standard deviation between the two profiles.

## CHAPTER 4

### DISCUSSION

In this study, a person-centered approach was used to examine patterns of parenting in large sample of low-income parents from the EHSREP database. The patterns of parenting were based on selected parenting behaviors and contexts evidenced to be influential in children's optimal development. It was hypothesized there would be variation in individuals' patterns of parenting behaviors and contexts within the sample of parents, and individuals who shared similar patterns of behaviors and contexts would form distinct subgroups. As hypothesized, using a person-centered statistical approach of latent profile analysis, variation in parenting behaviors and contexts was found within the sample, and individuals reporting similar patterns among the selected indicators divided into four distinct subgroups. The four subgroups (or profiles) differed from each other, but members within each profile shared common behaviors and characteristics. The four profiles identified were, in order of most supportive to least supportive of child development, (1) supportive, (2) engaged but punitive, (3) disengaged, and (4) disengaged and punitive. The two most supportive profiles (supportive and engaged but punitive) accounted for 76% of the sample population. The two least supportive profiles (disengaged, and disengaged and punitive) accounted for 24% of the sample population.

Profile 1, the supportive profile (37.4% of the sample), showed consistently higher levels of warmth, sensitivity and responsiveness to their child, and the highest frequency of shared bookreading and shared activities. This group also experienced the lowest levels of parent distress, punitive discipline and family conflict among all the participants in the sample. The parenting pattern in this profile reflects practices and

contexts that are supportive of children's early development (cite). Intervention offered to this profile may include encouragement to continue using the same strategies, and identifying the parent's positive parenting skills and applying those skills in different contexts.

The engaged but punitive profile group (38.4% of the sample) had a similar pattern as the supportive group, with slightly lower scores for shared bookreading and parent-child activities (but still above the group average), and just below the average for parent supportiveness. However, there was a dramatic difference between these two groups in the type of discipline typically used. There was almost a 2 SD difference in their discipline scores (1.94) with the second group choosing harsher and more punitive discipline strategies. Also, these parents scored slightly above average in parent stress and family conflict. Based on these data, the parents in this profile provide near or above average engagement and support their child, are experiencing slightly above average parental or family stress, and choose harsher, more punitive discipline strategies. There may be cultural or ethnic considerations as to why this profile scored so high on the discipline indicator. As found in an eight-country study exploring maternal warmth and corporeal punishment, (Lansford, et al., 2014) the two behaviors are not mutually exclusive. In the study, maternal warmth moderated the negative effects of corporal punishment in some countries, however, there were increases in anxiety over time for children whose mothers were high in both warmth and corporal punishment. Nonetheless, the families in this profile may benefit from services focusing particularly on intentional guidance strategies. Parents in this profile would also benefit from positive parenting tactics that utilize skills they already have developed, as well as methods for stress

reduction.

Profiles 3 and 4 comprised of 24% of the sample population, demonstrated greater need for parent programs and assistance improving the developmental environment for their children. Profile 3, the disengaged profile group (10.8% of the sample) had low scores on the positive parenting indicators, scoring almost one-and-a-half SDs lower score on parent-child activities and shared bookreading when compared to the supportive profile. This group also scored the highest on parent distress and the lowest on parent supportiveness. Interestingly, this profile had a very low score on the discipline measure, close to the supportive profile's score. These data indicate the parents in this disengaged group are stressed about being a parent, have marital stress, and initiate very little interaction with their child even when the situation may call for guidance. Services for this profile would include parent-child relationship building and sensitivity / responsiveness training, strategies and services to address parenting and marital stress, and intentionality in guidance strategies.

Profile 4, the disengaged and punitive profile group (13.4% of the sample) is the other profile considered less developmentally supportive, with low scores for responsive and sensitive parental behaviors, the lowest scores for frequency of reading with child and frequency of parent-child activities, and the highest score for type of discipline. This profile scored almost 2 SDs higher than the supportive group on the type of discipline used, and 1.6 SDs lower than the supportive group on frequency of parent-child activities. It is also important to note that this group scored the highest in family conflict, although the difference between the lowest and highest scoring groups was .4 SD. Parents in this disengaged and punitive profile are not interacting with their child, however utilize more



harsh and punitive discipline strategies, and are living with higher levels of parent distress and marital conflict. Services appropriate for parents in this group would be similar to the disengaged profile, except with more focus placed on guidance strategies, and on specific intervention addressing family conflict.

Families in the least supportive profiles demonstrate behaviors that mirror correlations between parent stress, marital conflict and positive/negative parenting behaviors found in the literature. For instance, even minor forms conflict and aggression between parents, such as criticism and controlling behaviors, have been linked with an increase in parents' use of physical punishment with young children (Taylor et al., 2010). Parents experiencing marital distress and conflict also have been found to show less warmth, display more negativity and greater inconsistency in discipline, have greater rejection and withdrawal towards their children, which in turn have been linked to poorer child outcomes (Gottman & Katz, 1989). Such parenting behaviors increase the likelihood of children developing conduct problems, and setting into motion a cycle of negative parent/child interactions that further stress the parents and potentially increase the possibility of negative outcomes for the child. For these families, this snowball effect places them at great risk for ongoing negative outcomes and most likely will require more program time, resources, and coaching.

For a practitioner who is planning services, this 4-profile description of his/her client base provides very practical, useful information. Each profile shows the group's areas of strength and need. The magnitude of the need is also indicated, helping the program director consider the intensity and duration of services needed for each profile. For instance, the service plan for the least supportive profiles may be of longer duration

and more intense than the plan for the parents in the supportive profile, who are already engaged in positive interactions that promote development. Although the least supportive profiles represent 24% of the client base, these profiles will most likely need a larger percentage of the resources to achieve the desired parent and child outcomes. Knowing 24% of the client base represents high-need families is helpful when budgeting and implementing resources, and corresponds to the finding that about a quarter of families in EHS were referred to as high need (cite) . The service components and program composition could be tailored based on the profile information. The director could decide if home visitors “specialize” in families with a particular profile, and if outside services are needed to address issues that are not covered by the program’s current services, for instance services that may need to be obtained through referrals such as intensive family counseling or specific therapies for coping with parenting stress.

### **Strengths, Limitations and Future Directions**

One strength of this study was the high quality data from the EHSREP data set. Comprehensive, multiple measures were used for the research study, offering researchers the ability to analyze data from a multitude of tested constructs. The video observations provided observed behavioral data, which has been preferred to parenting self-reports (Zaslow et al., 2006). The large subset of 2,121 parent-child dyad cases provided the ability for the analysis to possibly detect subtle links within the parenting patterns, influencing the final profile compositions.

Another strength was the study’s suitability for real-world implementation. Using a person-centered approach to classify individuals into subgroups with similar characteristics is intuitive, and can be easily translated into meaningful information by

practitioners. Parenting profiles offer the practitioner a comprehensive and comprehensible approach to meeting specific needs of the client-base while minimizing overlap or under-implementation of services. Also, using a person-centered approach enables researchers to identify variability in populations and examine characteristics that are associated, and possibly predictive, of this variability, thus giving a finer-grain view of holistic experiences of individuals.

A limitation is that participants in the research, although regionally representative of the US, were limited to families whose incomes were near, at, or below the poverty level. Therefore the parenting profiles found in this study might not generalize beyond this group.

A second limitation of this study is that practitioners managing program services will not likely be able to do a latent profile analysis on their client base. However, observational data could be gathered either by informal observations of the parenting patterns discussed here or by using observational measures designed to assess the parenting practices and contexts selected for this study.

Standardization procedures were applied to each indicator, thereby eliminating variance differences between each indicator, which may pose a problem if variation is larger in one or some of the indicators.

This study is limited by some parenting indicators being measured by parent self-report, which may have implications for the findings. Also, the found parenting profiles represent only one time point, when the parents' children were 36-months old, which may limit the utility of these findings, as parenting patterns may change over the course of a child's development.

Future studies that will benefit practitioners as well as advance research on parent and child development include examining parent and child characteristics that may differ between the found profiles, such as maternal education, material hardship, age of mother at first birth, mothers' mental health, mother's marital status, parents' beliefs about children and child temperament, and if those characteristics predict membership in the profile. Cook et al., 2012 found maternal education was predictive of an individual's place among three parent profiles, however ethnicity and psycho-social characteristics of the parent were not. Furthermore, knowledge of a parent's material hardship or child's temperament may offer the practitioner more specific information on what services are needed by parents in that subgroup. Also, for this sample, testing whether income levels differ between the profiles could offer more insight as to how poverty directly or indirectly affects child development.

Future research should also examine child outcomes across these parenting profiles and if the profiles are predictive of child cognitive, language and social outcomes. This would support existing research that found children whose parents were in the least developmentally supportive parent subgroup scored significantly lower in cognitive and social measures than the children whose parents were in the most developmentally supportive group (Cook, et al., 2012). Further research could show how different parenting profiles provide different emotional, contextual and stimulating environments that influence particular child outcomes. Also beneficial would be longitudinal research, from birth through pre-K and beyond, to examine the long-term effects of parenting profiles on child and parent outcomes, the stability of profiles during early childhood, and if the members of each profile tend to change profiles, especially if

they are receiving parenting and child services. Also, it would be interesting to examine the influence of child characteristics on parenting behavior and profiles over time.

Future studies combining person-centered approaches, such as parent profiles, with the emerging G x E (gene x environment) research could further validate the existing findings in both fields of genetics and human development. Studies are revealing how long term environmental factors, such as parenting practices, can alter child gene expression (Belsky, Jonassaint, Pluess, Stanton, Brummet, & Williams, 2009), and how child genotypes can be differentially susceptible to negative and positive developmental environments (Ellis, Boyce, Belsky, Bakermans-Kranenburg & Van IJzendoorn, 2011; Bakermans-Kranenburg, Van IJzendoorn, Pijlman, Mesman, & Juffer, 2008). Using the parenting practices that have been shown to influence gene expression, such as mother sensitivity and responsiveness, as indicators in a person-centered profile study would better identify the vulnerable families. Research is also uncovering the possibility that unfavorable epigenetic changes may be reversed, at least in part, by enrichment and improved processes (Bakermans-Kranenburg, Van IJzendoorn, Mesman, Alink, & Juffer, 2008). Being able to identify families who provide the least developmentally supportive environments soon after they have their child will offer the child the best chance to thrive.

### **Contributions**

This study enhances our understanding of parenting in several ways. Using a large data sample of parents who are ethnically diverse, low income, and typical of the population currently served by programs aimed to improve parenting practices, I identified 4 distinct subgroups (supportive, engaged but punitive, disengaged and

punitive, and disengaged). These subgroups (profiles) were markedly different in the overall supportive, developmental environment in which the child is embedded. Using person-centered analysis, I was able to determine a relative measure of parent supportiveness, parent-child interaction, discipline severity, and parent and family stress for families in each profile, thus revealing which profiles needed more intense intervention and in which areas. A practitioner who is directing parenting programs in interventions such as Early Head Start or Head Start would benefit from using these parent profiles. The profiles offer the practitioner a way of grouping together clients who share the same needs and measurably seeing the degree of need for each group, thus allowing available services to be more efficiently tailored and distributed. Because I know that parenting behaviors and circumstances vary tremendously, this analysis helps us more accurately answer the question “What works best for whom?”

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## TABLES AND FIGURES

**Table 1**

Baseline characteristics of research participants.

Characteristics	% in Program Group	% in Control Group
<b>Age of Mother at First Birth</b>		
< 19 yrs.	42.9	41.2
<b>Highest Grade Completed</b>		
Less than 12	47.7	47.8
12 or earned GED	27.3	29.8
More than 12	24.9	22.4
<b>Race and Ethnicity</b>		
White non-Hispanic	37.3	37.1
Black non-Hispanic	34.2	35.0
Hispanic	23.8	23.4
Other (Asian, Pacific Islander, American Indian, Eskimo, Aluet)	4.7	4.5
<b>Primary Occupation</b>		
Employed	22.9	23.8
In school or training program	22.0	21.4
Other	55.0	54.7
<b>English Language Ability</b>		
Primary language is English	79.9	78.1
Primary language is not English, but applicant speaks English well.	9.6	10.3
Primary language is not English, and applicant does not speak English well.	10.5	11.6
<b>Living Arrangements</b>		
Living with spouse	24.9	25.4
Living with other adults	38.3	39.1
Living with no other adults	36.8	35.5
<b>Household Income as a Percent of the Poverty Level (Percent)</b>		
Less than 33	30.2	30.0
33 – 67	32.5	29.2
67 – 99	24.0	26.5
100 or more	13.3	14.3

**Table 2**  
Descriptive Statistics for Data Set (raw data).

Indicator	Minimum	Maximum	Mean	SD
Parent Supportiveness	1	7	4.00	.98
Parent-Child Activities	1	6	4.36	.85
Frequency of Shared Reading	1	6	4.53	1.14
Type of Discipline	1	5	3.42	1.63
Parent Distress	12	58	25.19	9.59
Family Conflict	1	4	1.67	.53

**Table 3**  
Model fit test statistics for 3-, 4-, and 5-class models.

Number of classes	$p$ BLRT	$p$ Lo-Mendel- Rubin	AIC	BIC Adjusted
5-class	n/a	.9973	29,682	29,780
4-class	.00	.3495	29,969	30,051
3-class	.00	.00	30,513	30,578

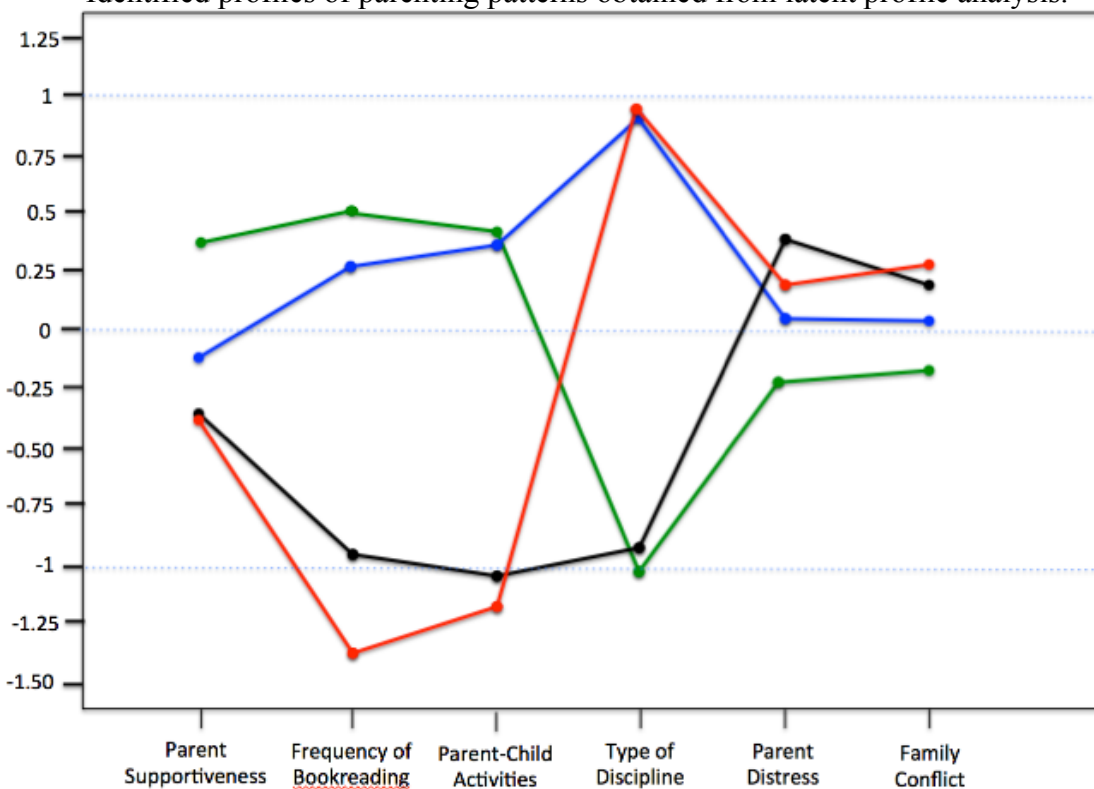
**Table 4**

Descriptive statistics (mean Z score) for parenting profile indicators when child is 36-months old.

	<i>Profile 1</i> <b>Punitive</b>	<i>Profile 2</i> <b>Engaged but Punitive</b>	<i>Profile 3</i> <b>Supportive</b>	<i>Profile 4</i> <b>Disengaged</b>
	Z score (S.E)	Z score (S.E)	Z score (S.E)	Z score (S.E)
Number in profile	285	814	794	228
% of profile	13.4%	38.4%	37.4%	10.8%
Parenting indicators				
Parent supportiveness	-0.32 (.08)	-0.14 (.04)	0.36 (.05)	-0.39 (.16)
Frequency of shared bookreading	-1.37 (.21)	0.26 (.07)	0.49 (.05)	-0.94 (.15)
Parent-child activities	-1.20 (.16)	0.33 (.08)	0.40 (.06)	-1.06 (.01)
Type of discipline	0.93 (.01)	0.92 (.01)	-1.02 (.02)	-0.92 (.05)
Parent distress	0.20 (.07)	0.04 (.04)	-0.22 (.04)	0.35 (.11)
Family conflict	0.26 (.09)	0.04 (.05)	-0.18 (.04)	0.19 (.10)

**Figure 1**

Identified profiles of parenting patterns obtained from latent profile analysis.



Profile 1	<span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black;"></span>	Supportive	37.4%
Profile 2	<span style="display: inline-block; width: 15px; height: 15px; background-color: blue; border: 1px solid black;"></span>	Engaged but punitive	38.4%
Profile 3	<span style="display: inline-block; width: 15px; height: 15px; background-color: black; border: 1px solid black;"></span>	Disengaged	10.8%
Profile 4	<span style="display: inline-block; width: 15px; height: 15px; background-color: red; border: 1px solid black;"></span>	Disengaged and punitive	13.4%